IMPORTANT INFO ABOUT STATIC AND HANDLING OF EPROMS

*When you feel a static shock from touching something, the discharge can commonly be **3000-4000 volts**! A minimum of 10 volts can damage an EPROM, causing the device it's in to malfunction. **You can damage an EPROM without even feeling a static shock.** Please take these steps to minimize electrostatic discharge:*

- Keep the EPROM in its anti-static packaging until ready for installation.

- Gather all the tools you need before installing your EPROM. Moving around the room to get things brings the possibility of static buildup and discharge.

- Don't work on carpet if possible--it increases chance of static buildup. Vinyl or wood floor is better.

- Touch a metal case to discharge static before handling EPROMs.

- Avoid touching EPROM pins. Handle EPROM by its edges.

- If you have an anti-static bracelet or other anti-static device it can help minimize static discharge. You can, however, handle an EPROM without these devices as long as you follow the steps above.

REMOVING AND INSERTING SOCKETED EPROMS

Disclaimer: If you do not have experience removing/installing socketed EPROMS it is recommended that you have a qualified technician do it. Installation mistakes can result in damage to the device being upgraded. We cannot be held responsible for damage done to device because of incorrect installation.

Often after years of sitting in its socket, the pins of an EPROM and socket contacts can become oxidized. This can make EPROMs difficult to remove. Be careful not to damage the EPROM or any other components.

First, locate EPROM on circuit board make sure it is socketed (not soldered to board) and take note of which end of the EPROM has a notch. The new EPROM must be installed with notch facing the same way. Installing an EPROM backwards can damage the host device. Do not go by which direction the text on the label of the EPROM is facing, this does not indicate the direction of the EPROM. Always go by the notch on the EPROM.

To remove EPROM: It is recommended that you use an EPROM extractor tool designed for removing IC's. *Alternatively:* Insert a small flathead screwdriver underneath one side of the EPROM. Pry up a little bit. Then insert the screwdriver under the other side and pry up a little bit. Alternate sides until the EPROM is loose and you are able to remove it with your fingers, only handling it at the ends.

To insert EPROM: Grasp the EPROM by its ends (try not to touch pins). The pins of the chip are usually preloaded (spread wider than the separation between the rows of pinholes) to assure that they will make good contact when the chip is seated. Thus, it may be difficult to insert the EPROM if it is level with the socket.

Tilt the EPROM sideways and place one row of pins into one side of the socket so that the pins are resting at the top of their respective pinholes, then tilt the EPROM toward the socket until the other row of pins makes contact with the top of the holes. The tops of the holes are angled so that the pins will be guided inward as gentle pressure is applied. However, before applying pressure make sure that all the pins are indeed aligned, and that they are not hanging over the edges of the socket. If the pins are spread too wide, prod each pin gently into place with the screwdriver as you press the EPROM into the socket.

H3500B-DFX Upgrade for all H3000 and H3500 Units

All Ultra-Harmonizers have the model number printed over the display. As the upgrades are done internally by adding software EPROMs, the front panel nomenclature will not apply if the internal software has been upgraded. Check your algorithms and presets with those listed below to confirm if your H3000/H3500 has upgrades installed.

The presets are sound effects written from algorithms installed in your unit. Algorithms are adjusted to create different effects and stored as presets. The original algorithms or any of the presets may be used for signal processing. The algorithms and presets are stored in ROM and cannot be deleted. The user may create unique presets by adjusting any algorithm or preset to the desired parameters and storing the new settings in battery-backed, NV SRAM. These new presets can be deleted if desired. All presets have an "origin" key that, when pressed, will display the algorithm that the preset was written from.

H3000/H3500 Modification Instructions

This document describes the procedure for adding the features of the H3500B-DFX to any H3000, H3000-S, H3000-D/SX, H3000-SE, H3000-B or H3500 Ultra-Harmonizer. If your H3000 unit has an operating system version of 2.16 or lower you must perform all of the modifications listed herein. If you have an H3000-B, H3000-S, or H3000-D/SX with an operating system of 2.17 or higher, or an H3500 unit skip the CUT AND JUMP section.

In some cases, you will have to do without the presets and some features you are used to until an EPROM exchange is made. As a consolation, you will have use of all the algorithms and presets of the H3000-D/SE to play with while the other EPROMs are in the exchange process. Be sure to read WHAT TO DO WITH THE LEFT OVER EPROMS section before doing the installation to determine if an exchange is required.

BEFORE BEGINNING

Save your presets! This modification procedure will cause all of your presets to be erased. If you have a computer with "MIDI Librarian" software, transfer them to the computer as described in the manual. If you don't, write down the settings for each

parameter. NOTE: This only applies to units with an operating system of 2.16 or higher. Many of the parameters in operating system versions 2.11 and lower have been changed in successive revisions and are not compatible with the new operating system.

The MODIFICATION KIT (H3500B-DFX) comprises the following components:

5 EPROMS

1 EPROM Removal Tool to facilitate EPROM removal.

You will also need:

Soldering iron and electronic-grade solder
Small phillips screwdriver
A cutting tool such as an Exacto knife or razor blade

1. REMOVE POWER FROM THE H3000 or H3500 by disconnecting the AC power cord. Disconnect all other cables to make access convenient.

2. REMOVE the TOP COVER from the unit by removing the phillips screws around the periphery of the cover.

3 PLACE the UNIT in front of you with the FRONT PANEL facing you. All instructions for the placing of EPROMs in sockets, the cuts, and jumps are described and/or shown with the unit in this position.

CUT AND JUMP PROCEDURE (Not necessary for some models, check jumpers before performing)

1. Locate the jumpers marked X1 through X8 found between the software EPROMS installed in the right, rear of the main PC board (see diagram).

2. Using the knife or razor blade, carefully cut between the pads as necessary to make your main pc board match with the cuts indicated in the diagram. Be sure to break the connection completely by insuring that any markings on the PC board that appear between the pads are cut completely through. This will insure a broken connection.

3. Short the pads as necessary to match your main PC board with the connections shown in the diagram. To do this you must create a small pool of solder across pads as indicated in the diagram. Be VERY CAREFUL to avoid bridging the gap(s) you created step 2 and avoid soldering anything else!

The pads should now be in exactly the same configuration as indicated in the diagram. Check your work to insure that all connections are broken where cut and there is continuity between the newly jumpered pads. (Note: most of the problems after an upgrade kit installation are solved simply by double checking the cut and jump work.)

INSTALL THE NEW H3500B-DFX EPROMS

When removing EPROMs, be sure they are static protected as you may need to re-install them at some point.

Be sure to install the EPROMs with the notch to the left. Do not rely on label orientation, as it may be different than the old EPROM's. As ROM 1 has fewer pins than the socket, be sure that it is installed flush right.

Recommended: Removal of the power cord socket will also help facilitate removal, making ROMS 2 and 3 much easier to reach. Be careful when removing this as the nuts and washers can easily be dropped into the unit.
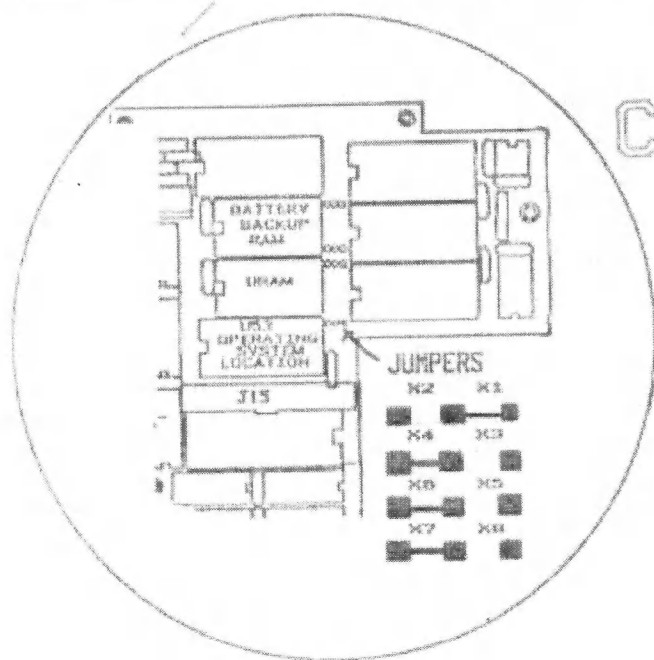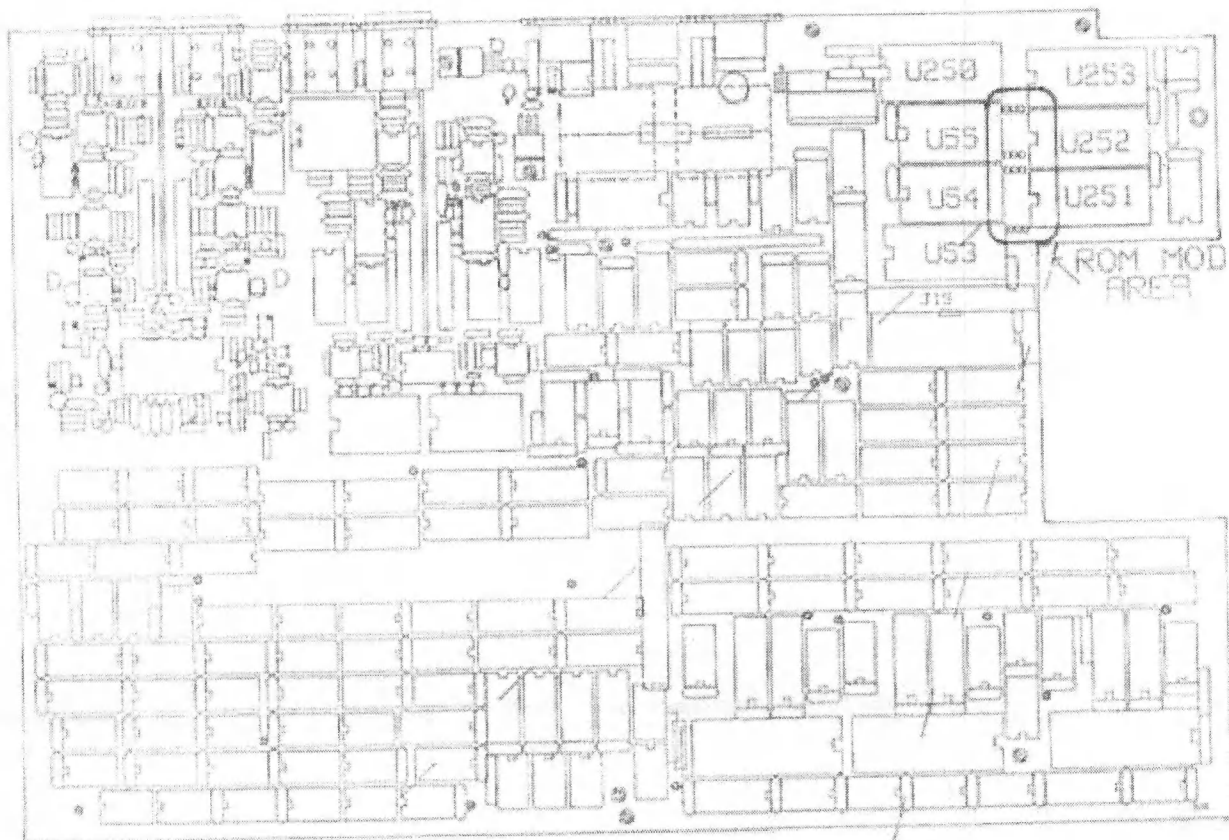
RESET PROCEDURE

1. Carefully inspect your work for shorts and soldering quality. Be sure that all pins of the EPROMs are inserted fully and none are bent underneath the body of the component.

2. Reconnect the AC power cord to the rear of the unit. The Operating System must now be reset by holding down the FUNCTION key while powering on the unit.

FINAL ASSEMBLY

1. Put the top cover back on. The machine screws go in the two holes in the front center of the unit, short screw towards the front of the unit. The remainder of the holes take the self-tapping screws.

H3000 CONVERSION

U250 U253
U55 U252
U54 U251
U53

ROM MOD
AREA

J15

CLOSE UP

BATTERY
BACKUP
RAM

DRAM

UNIX
OPERATING
SYSTEM
LOCATION

J15

JUMPERS

X2 X1
X4 X3
X6 X5
X7 X8

4

01: Location

First remove the top panel.

Place the unit with front panel in front of you. Stand above the unit, look below. The part you're looking for is located on the top right corner. You will need to remove the power supply connector (two screws) to be able to access all the chips.

FRONT PANEL
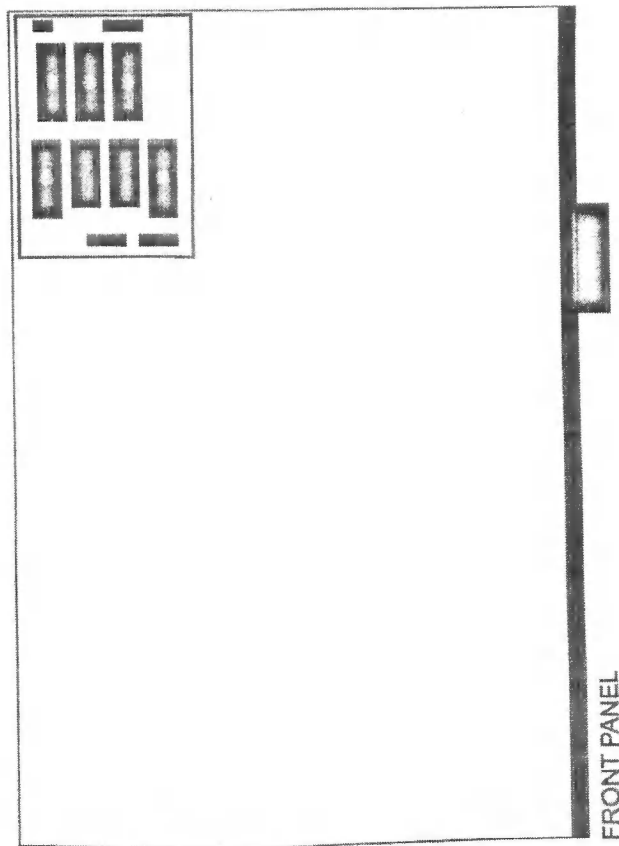
02: Layout of the EPROMS

EPROM number 01 should be placed exactly as shown on this picture and not any other way! Pay attention to four blank spaces on the left side. This is because Eventide used 32 pin sockets for is because Eventide used 32 pin sockets for both the 32 and 28 pin EPROMs. In case your unit has 28 pin socket, then it's pretty straightforward.